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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,635	03/14/2001	Donald Chaffee		2501

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EXAMINER

CHANG, RICHARD

ART UNIT PAPER NUMBER

2663

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/808,635		CHAFFEE ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Richard Chang		2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02/22/2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 31 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 15, 21-26, 28, 34 and 40 is/are rejected.
- 7) ☒ Claim(s) 7, 9-14, 16-20, 27, 29-33, 35-39 and 41-44 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Response to Amendment*

1. Applicant's arguments with respect to claims 1-44 have been fully considered but are moot in view of the new ground(s) of rejection.

Claims 32-33 had been canceled.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6,8,15,21-26,28,34 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 6,456,599 ("Elliott") in view of US patent No. 6,130,881 ("Stiller et al.") and US patent No. 6,084,858 ("Mathews et al.").

Regarding claims 1 and 40, Elliott teaches a communication network comprising a plurality of nodes (a network having a plurality of nodes) (Fig. 2) wherein each node has a central processing unit (CPU as block 3), a memory (block 4) suitable for computing capacity and a transceiver (block 6) from communication with other nodes (wherein each of ... with one or more other nodes) (See Fig. 1, Col. 6, lines 25-34),

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wherein the communication path from source node A to destination node D (Fig. 2) may contains at least node C or node E (wherein a communication sent ... one or more nodes) (Fig. 2), and

wherein each node gathers information regarding potential neighbors and each node determines a best-path transmission path to optimally send or receive messages through the network (wherein each of said nodes in said ... from each neighboring node) (See Fig. 3 and Fig. 4, Col. 8, lines 17-35).

Elliott teaches substantially all the claimed invention but did not disclose expressly the particular application involving limitations of

“determines the best path for said communication to the destination node through a neighboring node based on information received from each neighboring node”.

Stiller et al. teach that each node receives message and its routing data from neighboring communication nodes the updated best routing information (determines the best path for said communication to the destination node through a neighboring node based on information received from each neighboring node) (See Fig. 1 & 2, Col. 7, lines 3-18).

A person of ordinary skill in the art would have been motivated to employ Stiller et al. in Elliott in order to obtain a communication network comprising a plurality of nodes and to take advantage of receiving message and its routing data from neighboring communication nodes the updated best routing information in claims 1 and 40.

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The suggestion/motivation to do so would have been to receives message and its routing data from neighboring communication nodes the updated best routing information, as suggested by Huang in Col. 7, lines 3-181. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Stiller et al. with Elliott to obtain the inventions specified in claims 1 and 40.

Regarding claim 21, this claim have limitation that is similar to those of claim 1 and Elliott further teaches that the node iterates through possible combinations of promoting some potential neighbors into actual neighbors if the new topology is better than the current topology (continuing the steps ... the communication) (See Fig. 9, Col. 10, lines 61-65), thus it is rejected with the same rationale applied against claim 1 above.

Regarding claims 2 and 22, this claim have limitation that is similar to those of claims 1 and 21 and Elliott further teaches that the potential neighbor updates are issued on an event-driven basis including a change in a node's set of potential neighbors and a node would thus upgrade a subset of its potential neighbors to actual neighbors and issues potential-neighbor updates (wherein communication paths ... generated by neighboring nodes) (See Fig. 3, Col. 5, lines 24-28), thus it is rejected with the same rationale applied against claims 1 and 21 above.

Regarding claims 3 and 23, this claim have limitation that is similar to those of claims 1 and 21 and Elliott further teaches that the Dijkstra's algorithm determines the best path using the lowest cost from a set of shortest paths from

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the calculating node to all other nodes in the network. (the best path is one that minimizes a selected cost function) (See Fig. 2, Col. 5, lines 44-54), thus it is rejected with the same rationale applied against claims 1 and 21 above.

Regarding claims 5 and 25, this claim have limitation that is similar to those of claims 1 and 21 and Elliott further teaches each node has a snapshot database including actual and potential neighbors and a shortest path tree with itself as the root and all other nodes and a path metric is the sum of the lengths along that path (the metric includes the number of ... reaching the destination node) (See Fig. 2, Col. 8, lines 19-27), thus it is rejected with the same rationale applied against claims 1 and 21 above.

Regarding claims 8 and 28, this claim have limitation that is similar to those of claims 1 and 21 and Elliott further teaches that if a node noticed a heavy flow of messages along a network path that could be handled more efficiently if the network topology were slightly adjusted, it could send a message to the affected nodes requesting them to upgrade their potential neighbor relationships to actual neighbor relationships (the metric includes the traffic burden on individual nodes in the network) (See Fig. 3, Col. 6, lines 3-14), thus it is rejected with the same rationale applied against claims 1 and 21 above.

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Regarding claims 15 and 34, this claim have limitation that is similar to those of claims 1 and 21 and Elliott further teaches that that each node has a snapshot database and a shortest path tree to generate a forwarding table that optimally indicates which overall path having the lowest cost should be used for any giving destination node (information that is used for path selection is maintained in a table in each node) (See Fig. 10, Col. 8, lines 19-25), thus it is rejected with the same rationale applied against claims 1 and 21 above.

Regarding claims 4 and 24, in the previous action item 4, Elliott and Stiller et al. teach substantially all the claimed invention but did not disclose expressly the particular application involving limitation of

“the cost function is composed of one or more metrics that are defined by the goals of the particular network”.

Mathews et al teach a communications network particularly to a method of distributing communication loads over multiple alternative paths wherein the selection of the best path may be based upon finding a path which is optimal for one or more metrics through a network which satisfies a number of independent constraints (at least one switch of at least one stage comprising a time-slot interchanger); (See Fig. 1, Col 5, lines 54-65).

A person of ordinary skill in the art would have been motivated to employ Mathews et al in Elliott and Stiller et al. in order to obtain network node arrangements that gather information regarding neighboring nodes and distribute the information regarding the neighbors throughout the network and to take

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advantage of one or more metrics through a network which satisfies a number of independent constraints in claims 4 and 24.

The suggestion/motivation to do so would have been to accommodate network node arrangements that gather information regarding neighboring nodes and distribute the information regarding the neighbors throughout the network and to take advantage of one or more metrics through a network which satisfies a number of independent constraints in claims 4 and 24. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Mathews et al with Elliott and Stiller et al. to obtain the inventions specified in claims 4 and 24.

Regarding claims 6 and 26, in the previous action item 4, Elliott and Stiller et al. teach substantially all the claimed invention but did not disclose expressly the particular application involving limitation of

"the metric includes the probability of successful transmission though a route".

Mathews et al further teach that all the successful paths are evaluated and the path, which best fits the desired result is, selected based on the metric of highest probability (the metric includes the probability of successful transmission though a route) (See Col 7, lines 12-17).

A person of ordinary skill in the art would have been motivated to employ Mathews et al in Elliott and Stiller et al. in order to obtain network node arrangements that gather information regarding neighboring nodes and distribute the information regarding the neighbors throughout the network and to take



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advantage of the metric includes the highest probability of successful transmission though a route as in claims 6 and 26.

The suggestion/motivation to do so would have been to accommodate network node arrangements that gather information regarding neighboring nodes and distribute the information regarding the neighbors throughout the network and to take advantage of the metric includes the highest probability of successful transmission though a route as in claims 6 and 26. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Mathews et al with Elliott and Stiller et al. to obtain the inventions specified in claims 6 and 26.

#### ***Allowable Subject Matter***

4. Claims 7, 9-14, 16-20, 27, 29-31, 35-39 and 41-44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if no art rejection can be applied.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Chang whose telephone number is (571) 272-3129. The examiner can normally be reached on Monday - Friday from 8 AM to 5 PM.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
rkC

Richard Chang  
Patent Examiner  
Art Unit 2663

  
RICKY NGO  
PRIMARY EXAMINER

9/27/05